

SECTION III—REMARKS

This amendment is in response to the Office Action mailed May 18, 2004. Claims 1, 10, 38 and 44 are amended herein to more clearly recite the invention. Claims 1-19 and 38-51 remain pending in the application. Applicants respectfully request reconsideration of the application and allowance of all pending claims in view of the above amendments and the following remarks.

Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1-3, 7-8 and 38 as anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,866,953 to Akram et al ("Akram"). Applicants respectfully traverse the Examiner's rejections. A claim is anticipated only if each and every element, as set forth in the claim, is found in a single prior-art reference. MPEP § 2131; *Verdegaal Bros. v. Union Oil of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). As explained below, Akram cannot anticipate these claims because it does not disclose every element and limitation recited therein.

Claim 1 recites an apparatus combination including a die mounted on a substrate, the die being connected to the substrate by a plurality of wires and a mold cap encapsulating the die and the plurality of wires, the mold cap comprising "an electrically insulating portion encapsulating substantially all the wires and the die" and "a thermally conductive portion encapsulating substantially all the electrically insulating portion." Akram cannot anticipate this claim because it does not disclose combinations including the recited limitations. Akram discloses an encapsulated semiconductor assembly in which a barrier glob top 626 is applied to surround the periphery of the chip 602. Akram does not disclose, teach or suggest that the barrier glob top 626 should be applied anywhere other than the periphery of the chip 602. Akram therefore cannot disclose, teach or suggest a combination including "an electrically insulating portion encapsulating substantially all the wires and the die," and "a thermally conductive portion encapsulating substantially all the electrically insulating portion." Applicants submit that Akram therefore cannot anticipate this claim and respectfully request its allowance.

Regarding claims 2-3 and 7-8, if an independent claim is allowable, then any claim depending therefrom is also allowable. See, e.g., MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 1 is in condition for allowance. Applicants submit that claims 2-3 and 7-8 are therefore allowable by virtue of their dependence on an allowable

independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

Claim 38 recites an apparatus combination including a die mounted on a substrate, the die being connected to the substrate by a plurality of wires, and a mold cap encapsulating the die and the plurality of wires, the mold cap comprising "an electrically insulating portion encapsulating substantially all the wires and the die" and "a thermally conductive portion encapsulating substantially all the electrically insulating portion." By analogy to the discussion above in connection with claim 1, Akram does not disclose, teach or suggest a combination including these limitations. Applicants submit that Akram therefore cannot anticipate claim 38 and respectfully request allowance of the claim.

Regarding new claims 39-43, if an independent claim is allowable, then any claim depending therefrom is also allowable. *See, e.g.,* MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 38 is in condition for allowance. Applicants submit that claims 39-43 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request allowance of these claims.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 4-6, 9-19 and 39-51 under 35 U.S.C. § 103(a) as obvious in view of, and therefore unpatentable over, various combinations of Akram, U.S. Patent No. 6,309,915 to Distefano ("Distefano"), and U.S. Patent Application Publication No. 2003/0092205 to Wu ("Wu"). Specifically, the Examiner rejected claims 4-6, 9, 39-42 and 47-50 as unpatentable over Akram in view of Distefano, and rejected claims 10-19 and 44-46 as unpatentable over Akram in view of Wu.

Applicant respectfully traverses the Examiner's rejections. To establish a *prima facie* case of obviousness, the Examiner must establish that three criteria are met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As explained below, the Examiner has not established a *prima facie* case of obviousness.

Claims 10-19, and 44-46 are not obvious over Akram in view of Wu

The Examiner concedes that Akram does not disclose a stacked die structure but alleges that Wu discloses such a structure, and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Akram with a stacked structure as taught by Wu in to increased the devices in one package, since a stacked structure would provide more surface area.

Claim 10 recites an apparatus combination including a stack of dies mounted on a substrate, and a mold cap encapsulating the wires and the stacked dies, the mold cap comprising "an electrically insulating portion encapsulating substantially all of the wires and the stacked dies" and "a thermally conductive portion encapsulating substantially all the electrically insulating portion." By analogy to the discussion above in connection with claim 1, Akram does not disclose, teach or suggest an apparatus combination including the recited limitations. Wu also does not disclose a combination including these limitations. Akram and Wu, alone or combined, therefore cannot disclose every element and limitation of the claim, and cannot obviate the claim. Applicants therefore respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 11-19, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 10 is in condition for allowance. Applicants therefore respectfully submit that claims 11-19 are allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Claim 44 recites an apparatus combination including a stack of dies mounted on a substrate and a mold cap encapsulating the wires and the stacked dies, the mold cap comprising "an electrically insulating portion encapsulating substantially all the wires and the stack of dies" and "a thermally conductive portion encapsulating substantially all of the electrically insulating portion." By analogy to the discussion above for claim 10, Akram and Wu, alone or combined, do not disclose every element and limitation of the claim, and therefore cannot obviate the claim. Applicants therefore respectfully request allowance of the claim.

Regarding claims 45-46, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 44 is in condition for allowance. Applicants therefore respectfully submit that claims 45-46 are allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request allowance of these claims.

Claims 4-6, 9, 39-43 and 47-51 are not obvious over Akram in view of Distefano

Regarding claims 4-6 and 9, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 1 is in condition for allowance. Applicants therefore respectfully submit that claims 4-6 and 9 are allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Regarding claims 39-43, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 38 is in condition for allowance. Applicants therefore respectfully submit that claims 39-43 are allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Regarding claims 47-51, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 44 is in condition for allowance. Applicants therefore respectfully submit that claims 47-51 are allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Conclusion

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.


Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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Date: 7-19-04


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Enclosures: USPTO Fax Cover Sheet
Amendment transmittal, in duplicate